Errata in the Math 222 notes

Page 9, Among the list of standard integrals include $\int \frac{1}{\sqrt{x^2+1}} dx = \ln(x + \sqrt{x^2+1}) + C.$ $\int \frac{1}{\sqrt{x^2-1}} dx = \ln(x + \sqrt{x^2-1}) + C, \text{ for } x > 1.$ They are needed in some of the problems.

Page 10, line 15 $\int_{G(1)}^{G(2)} \frac{1}{u} du \text{ should be } \int_{G(0)}^{G(1)} \frac{1}{u} du.$

Page 14 3rd line (b.) "oscillation"

Page 19, Example 9.1. The denominator $x^2 - 1$ should be replaced by $x^2 - x$ thoughout this example.

Page 24, problem 52: $\int_2^3 \sin \rho (\cos 2\rho)^4 \, d\rho$ can be done but I'd rather replace it by $\int_2^3 \sin 2\rho (\cos 2\rho)^4 \, d\rho$

Page 24, problem 55. $\pi/2 \le \theta \le \pi/2$ should be $-\pi/2 \le \theta \le \pi/2$.

Page 25, problem 56 (i): $\cos(\arcsin(x))$

Page 25, problem 56 (iii). This is not technically a misprint, but very confusing notation. One should change the notation to $\sin(2 \arctan a)$ (since α usually denotes an angle).

Page 28, problem 113. Part (b) should refer to (a) and not to (i).

page 32. In the displayed formula following (8) a term $\frac{f''(0)}{3!}x^3$ should be replaced with $\frac{f'''(0)}{3!}x^3$.

page 35. In the line preceding formula (9), replace f''(3) = 6 with f'''(3) = 6.

page 58. Problem 152. A third order polynomial ...

page 68. Second line: In the first double angle formula, $\cos \theta$ on the left hand side of the equation should be replaced with $\cos 2\theta$.

page 75, Problem 264, (g) is the same as (i).

page 85: last formula: \mathcal{L}_3 should be \mathcal{L}_2 .

p. 91, l. 26: $Be^{-t}e^{-t}\sin(2t)$ should be $Be^{-t}\sin(2t)$.

page 96, problem 291: This equation should perhaps not be called logistic equation. The logistic equation in population growth models is of the form $y' = ay - by^2$. page 96: problem 298 is not done with separation of variables.

page 100: Problem 357. The expression $\frac{c}{\omega^2 - \omega_0^2}$ should be changed to $\frac{c}{\omega_0^2 - \omega^2}$.

page 107: (first line in 42.1) A(2,1) should be changed to A(1,2).

page 121: l. 20 vb should be the vector **v** (with an arrow).

The calculation for the vector $\mathbf{d} - \mathbf{a}$ (i.e. the vector from A to D) is wrong. Replace $\begin{pmatrix} 2-2\\ 1-0\\ 1-0 \end{pmatrix}$ with $\begin{pmatrix} 2-1\\ 1-0\\ 1-2 \end{pmatrix}$. page 134: line 3 from bottom $\begin{pmatrix} \sin t\\ -\cos t \end{pmatrix}$ should be $\begin{pmatrix} \sin t\\ \cos t \end{pmatrix}$. page 136: line 6 from bottom: The last expression should be $\omega R \begin{pmatrix} -\sin \omega t\\ \cos \omega t \end{pmatrix}$. page 142: Right above the big diagram it should say that x'(t) = 2(1-t)(1+t)changes its sign at t = -1 and t = +1.

page 144: In the first displayed formula $\sum_{i=1}^{N} N$ should be $\sum_{i=1}^{N} N$.

page 155: Answer to problem 211. Replace $(-1)^n \frac{t^{2n}}{(2n)!}$ with $(-1)^n \frac{t^{2n}}{n!}$.

page 156: Final answer to problem 294 incorrect.

page 157: Answers to problems 296 and 299 are incorrect.